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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/718,129

11/20/2003

Norival R. Figueira

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EXAMINER

PATEL, CHANDRAHAS B

ART UNIT

PAPER NUMBER

2416

NOTIFICATION DATE

DELIVERY MODE

12/04/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/718,129	Applicant(s) FIGUEIRA ET AL.	
	Examiner Chandahas Patel	Art Unit 2416	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 and 15-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 15-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. In view of the appeal brief filed on 9/30/2008, PROSECUTION IS HEREBY REOPENED. New grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

/Ricky Ngo/

Supervisory Patent Examiner, Art Unit 2416.

Claim Rejections - 35 USC § 101

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim 10 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. A data structure *per se* is non-statutory. Merely putting a data structure on a computer readable medium does not make it statutory because a protocol data unit

on a computer readable medium is not capable of causing any functional change in the computer, thus does not produce a useful result [See MPEP 2106.01].

Claim Rejections - 35 USC § 102

3. Claims 15, 16, 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Pearce et al. (USPN 6,556,574).

Regarding claim 15, Pearce teaches a method of assigning a Media Access Control (MAC) address to an interface on a network [Col. 14, lines 44-47], comprising: setting a local bit in the MAC address to indicate to network elements on the network that the MAC address is locally assigned [Col. 14, lines 44-47, **global/local bit identifies if MAC address is locally assigned**]; and assigning a first value to a first field of the MAC address, the first field containing a smaller number of bits than a total number of bits of the destination MAC address [Fig. 6A, 604, Col. 13, lines 59-64, **Fields 604 contains less number of bits than the total number of bits in the MAC address**], the first value containing first output interface information usable by a first switch to identify a first output interface for transmission of frames containing the first value in the first field of the MAC address [Col. 20, lines 10-18, **output interface is assigned based on the value of MAC address from ARP table of Fig. 10**].

Regarding claim 16, Pearce teaches collecting the first output interface information from the first switch [Col. 20, lines 10-18].

Regarding claim 19, Pearce teaches transmitting the MAC address to a network device containing the interface to which the MAC address has been assigned [Col. 11, lines 29-34].

Claim Rejections - 35 USC § 103

4. Claims 1, 3, 5, 6, 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schaub et al. (USPN 7,190,695) in view of Sandstrom (USPN 7,254,138).

Regarding claim 1, Schaub teaches a method of switching frames at a first switch on a communication network [**Abstract**], comprising the steps of: receiving a frame at a first switch [**Fig. 5, 536, receives packets**]; extracting frame contained destination information from the received frame [**Col. 7, lines 47-56, destination information is parsed and extracted from packet**]; making a switching decision with the first switch based on the extracted frame contained destination information to determine an output port from the first switch over which the frame should be forwarded onto the communication network [**Col. 7, lines 47-62, switches frames based on information from destination address**]; forwarding the frame within the switch to the output port over the frame should be forwarded onto the communication network [**Col. 9, lines 21-41, forwards frames based on output link IDs**]; and transmitting the frame from the determined output port onto the communication network [**Fig. 5, 522, transmits from output links to network**]; whereby a received frame may be transmitted from an input port to a determined output port [**Col. 9, lines 21-41, received packets are transmitted from input to output port based on output link IDs looked up from destination address field**].

However, Schaub does not teach making a switching decision without performing a lookup in a forwarding table; and transmitting a frame onto the communication network based on the frame contained destination information without performing a table lookup operation to determine the output port.

Sandstrom teaches making a switching decision without performing a lookup in a forwarding table [**Abstract, has look-up-free forwarding**]; and transmitting a frame onto the communication network based on the frame contained destination information without performing a table lookup operation to determine the output port [**Col. 9, lines 44-51 and Col. 10, lines 12-19, determines proper output port without doing lookup and based on information in packet header**].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to make a switching decision without doing a table look-up to avoid complexity and cost of implementing forwarding tables [**Col. 9, lines 56-67**].

Regarding claim 3, Schaub teaches destination information comprises a portion of a MAC address [**Col. 7, lines 49-56**].

Regarding claim 5, Schaub teaches extracting comprises reading a field of the MAC address [**Col. 7, lines 47-56**], the field of the MAC address being a selected number of bits of the MAC address smaller than the total number of bits of the MAC address and located at a particular location within the MAC address [**Col. 7, lines 56-60**], and wherein ascertaining comprises using information in the field to identify the output port [**Col. 8, lines 59-67 – Col. 9, lines 1-4**].

Regarding claim 6, Schaub teaches reading at least a second field of the MAC address [**Col. 7, lines 47-56, source address is the second field of the MAC address**].

Regarding claim 10, Schaub teaches a protocol data unit data structure stored in a tangible computer readable medium [**Fig. 1, packets**], the protocol data unit data structure comprising: a destination MAC address, the destination MAC address being a local MAC

address having a plurality of fields [**Col. 7, lines 47-56**], each of the fields including a number of bits smaller than a total number of bits of the destination MAC address [**Fig. 6**]; and a payload portion [**Col. 3, lines 12-15, each packet has data portion**].

However, Schaub does not teach each of the fields containing a code to be used by a switch on a network to identify an output port on the switch without performing a table lookup operation, wherein each of the fields is to be used by a different switch on a network.

Sandstrom teaches each of the fields containing a code to be used by a switch on a network to identify an output port on the switch without performing a table lookup operation, wherein each of the fields is to be used by a different switch on a network [**Col. 9, lines 44-51 and Col. 10, lines 12-34, determines proper output port without doing lookup and based on information in packet header**].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to make a switching decision without doing a table look-up to avoid complexity and cost of implementing forwarding tables [**Col. 9, lines 56-67**].

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schaub et al. (USPN 7,190,695) and Sandstrom (USPN 7,254,138) in view of Hughes, Jr. (USPN 7,277,399).

Regarding claim 2, the references teach a method as discussed in rejection of claim 1.

However, the references do not teach reading a portion of a header of the frame and causing the frame to be passed directly to the output port without performing a table lookup operation.

Hughes teaches reading a portion of a header of the frame and causing the frame to be passed directly to the output port without performing a table lookup operation [**Fig. 4, 410**].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to pass the frame directly to the output without performing a table lookup so that most frequently accessed destinations can be switched quickly [**Col. 1, lines 24-30**].

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schaub et al. (USPN 7,190,695) and Sandstrom (USPN 7,254,138) in view of Dobson (USPN 6,891,887).

Regarding claim 4, the references teach a method as discussed in rejection of claims 3.

However, the references do not teach the MAC address is a local destination MAC address.

Dobson teaches the MAC address is a local destination MAC address [**Col. 8, lines 35-37**].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a local destination MAC address so that all the frames that do not correspond to their MAC address can be discarded [**Col. 8, lines 38-40**].

7. Claims 7, 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schaub et al. (USPN 7,190,695) and Sandstrom (USPN 7,254,138) in view of Ohgane (USPN 6,707,814).

Regarding claim 7, the references teach a method as discussed in rejection of claim 3.

However, the references do not teach destination information comprises a local MAC address having at least two fields, the first field containing information for the first switch and

the second field containing information for a second switch connected to an interface of the first switch.

Ohgane teaches destination information comprises a local MAC address having at least two fields, the first field containing information for the first switch and the second field containing information for a second switch connected to an interface of the first switch [Fig. 2A, 2B, multiple cells each having MAC address for other destinations are included in 20a, Col. 7, lines 15-18].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have multiple fields containing multiple MAC addresses for multiple switches for broadcast service [Col. 6, lines 64-67 – Col. 7, line 1].

Regarding claim 8, Schaub teaches extracting comprises reading the first and second fields [Col. 7, lines 47-56].

8. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schaub et al. (USPN 7,190,695) and Sandstrom (USPN 7,254,138) in view of Ohgane (USPN 6,707,814) as applied to claim 8 above, and further in view of Tursich (USPN 6,671,828).

Regarding claim 9, the references teach a method as discussed in rejection of claim 8.

However, the references do not teach comparing information in the second field with expected information, and selecting as the output port an output port on the first switch that is connected to second switch if the information in the second field does not match the expected information.

Tursich teaches comparing information in the second field with expected information, and selecting as the output port an output port on the first switch that is connected to second switch if the information in the second field does not match the expected information [**Fig. 3**].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the output port if the information does not match the expected information so that packet could be transferred and the source address can also be learned [**Col. 4, lines 27-30**].

9. Claims 17, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pearce et al. (USPN 6,556,574) in view of Ohgane (USPN 6,707,814).

Regarding claim 17, Pearce teaches a second field containing a smaller number of bits than the total number of bits of the destination MAC address [**Fig. 6A, 604, Col. 13, lines 59-64**].

However, Pearce does not teach assigning a second value to a second field of the MAC address, the second value containing second output interface information usable by a second switch to identify a second output interface for transmission of frames containing said MAC address.

Ohgane teaches assigning a second value to a second field of the MAC address, the second value containing second output interface information usable by a second switch to identify a second output interface for transmission of frames containing said MAC address [**Fig. 2A, 2B, multiple cells each having MAC address for other destinations are included in 20a, Col. 7, lines 15-18**].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have multiple fields containing multiple MAC addresses for multiple switches for broadcast service [**Col. 6, lines 64-67 – Col. 7, line 1**].

Regarding claim 18, Pearce teaches collecting the output interface information from the switch [**Col. 20, lines 10-18**].

10. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pearce et al. (USPN 6,556,574) in view of Ocepek et al. (USPN 7,124,197).

Regarding claim 20, Pearce teaches a method as discussed in rejection of claim 19.

However, Pearce does not teach setting the network device in promiscuous mode to cause the network device to receive MAC address.

Ocepek teaches setting the network device in promiscuous mode to cause the network device to receive MAC address [**Col. 9, lines 31-35**].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to set the device in promiscuous mode to receive MAC address since in this mode all data will be received regardless of device's MAC address [**Col. 9, lines 31-35**].

11. Claims 21, 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pearce et al. (USPN 6,556,574) in view of Fijolek et al. (USPN 7,107,326).

Regarding claim 21, Pearce teaches a method as discussed in rejection of claim 15.

However, Pearce does not teach assigning a second field of the MAC address according to a prefix of the first switch.

Fijolek teaches assigning a second field of the MAC address according to a prefix of the first switch [**Col. 15, lines 14-15**].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to assign a prefix to MAC address to restrict access for certain network devices [**Col. 15, lines 12-14**].

Regarding claim 22, Fijolek teaches the prefix is a portion of all local MAC addresses that are reachable through the first switch [**Col. 15, lines 20-24**].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the prefix that indicates all local MAC addresses that are reachable to enable filtering by a system administrator [**Col. 15, lines 20-24**].

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chandrahas Patel whose telephone number is (571)270-1211. The examiner can normally be reached on Monday through Thursday 7:30 to 17:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on 571-272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR

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system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ricky Ngo/
Supervisory Patent Examiner, Art Unit
2416

/Chandrabhas Patel/
Examiner, Art Unit 2416